

PATENT COOPERATION TREATY 532910

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From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

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NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing
(day/month/year)

17.01.2005

Applicant's or agent's file reference
RLL-301WO

IMPORTANT NOTIFICATION

International application No.
PCT/IB 03/04866

International filing date (day/month/year)
31.10.2003

Priority date (day/month/year)
31.10.2003

Applicant
RANBAXY LABORATORIES LIMITED

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.
4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international
preliminary examining authority:



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DUPLICATE

PATENT COOPERATION TREATY

PCT

10/532910

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference RLL-301WO	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/IB 03/04866	International filing date (day/month/year) 31.10.2003	Priority date (day/month/year) 31.10.2003
International Patent Classification (IPC) or both national classification and IPC C07D473/00, C07D473/18		
Applicant RANBAXY LABORATORIES LIMITED		



- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of sheets.

- This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 20.05.2004	Date of completion of this report 17.01.2005
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Fritz, M Telephone No. +49 89 2399-2792 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/B 03/04866**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

Description, Pages

1-8 as originally filed

Claims, Numbers

1-23 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

- (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/B 03/04866

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	6-7
	No: Claims	1-5,8-23
Inventive step (IS)	Yes: Claims	
	No: Claims	1-23
Industrial applicability (IA)	Yes: Claims	1-23
	No: Claims	

2. Citations and explanations

see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB 03/04866

Re Item V

Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

- D1: EP-A-0 074 306 (MERCK & CO INC) 16 March 1983 (1983-03-16)
D2: EP-A-0 165 164 (MERCK & CO INC) 18 December 1985 (1985-12-18)
D3: WO 03/033498 A (BABU JAYACHANDRA SURESH ; KHANDURI CHANDRAS HAS (IN); RAY PURNA CHANDR) 24 April 2003 (2003-04-24)
D4: US-A-5 792 868 (KOGUCHI YOSHIHITO ET AL) 11 August 1998 (1998-08-11)
D5: EP-A-0 532 878 (AJINOMOTO KK) 24 March 1993 (1993-03-24)
D6: EP-A-0 138 683 (MERCK & CO INC) 24 April 1985 (1985-04-24)

The present application relates to a process for the preparation of N2-acetyl-9-(1,3-diacetoxy-2-propoxymethyl)guanine of formula I (claims 1-17), the compound N2-acetyl-9-(1,3-diacetoxy-2-propoxymethyl)guanine itself (claims 18-22) and a process for the preparation of ganciclovir of formula II starting from 2-acetyl-9-(1,3-diacetoxy-2-propoxymethyl)guanine as prepared by the process of claim 1 (claim 23).

It is noted that neither a higher degree of purity nor a new process for its production renders a known chemical compound novel.

Thus step C according to ex. 1 of D1 or D2 takes away the novelty of claim 23 (Article 33(2) PCT).

Step B according to ex. 1 of D1/D2 (a process also comprising taking up 2-acetyl-9-(1,3-diacetoxy-2-propoxymethyl)guanine in ethyl acetate and then - after crystallisation - re-moving the solvent) is detrimental for the novelty of claims 1, 13-17 (Art. 33(2) PCT).

As in step B according to ex. 1 of D1/D2 2-acetyl-9-(1,3-diacetoxy-2-propoxymethyl)guanine is prepared (in crystalline form which indicates an extremely high purity, although this is not relevant, vide supra), the subject-matter of claims 18-22 is not novel in the sense of Article 33(2) PCT.

Ex. 8-10 of D3 relate to the synthesis of 2-acetyl-9-(1,3-diacetoxy-2-propoxymethyl)guanine including the step of purifying the product in a mixture of toluene and methanol. By consequence the subject-matter of claims 1-5 and 8-22 is not novel in the sense of Article 33(2) PCT.

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/IB 03/04866

The process disclosed in ex. 6 of D4 takes away the novelty of claim 23 (Article 33(2) PCT).

The synthesis of 2-acetyl-9-(1,3-diacetoxy-2-propoxymethyl)guanine, I, in pure form is also described in ex. 5 of D5 and ex. 14 of D6. Again the disclosure of these two documents is detrimental for the novelty of claims 18-22.

The novelty of claims 6-7 is acknowledged (Article 33(2) PCT).

An inventive step in the sense of Article 33(3) PCT cannot be acknowledged for the subject-matter of claims 1-5 and 8-23, as they are not novel.

Claims 6-7 refer to the use of solvents for the purification of 2-acetyl-9-(1,3-diacetoxy-2-propoxymethyl)guanine which have not been suggested for that purpose in D3.

The choice of a new solvent (system) is - however - considered trivial and well within the abilities of a skilled person.

The subject-matter of claims 6-7 does - by consequence - not fulfil the requirements of Article 33(3) PCT.